

Listing the of Claims:

This listing of the claims replaces all prior versions and listings of claims in the present application:

1 through 96 (Cancelled).

97. (New). A method for processing a tissue sample comprising exposing said tissue sample to ultrasound of a frequency of at least 100 Khz wherein the ultrasound is applied to the tissue sample in a reaction chamber and the tissue sample, the ultrasound transducer and a sensor are moved from a first reaction chamber to a second reaction chamber by a robotic system.

98. (New). The method of claim 97 wherein the first reaction chamber contains a fixative.

99. (New). The method of claim 97 wherein a second reaction chamber contains ethanol.

100. (New). The method of claim 97 comprising moving the tissue sample to a third reaction chamber containing xylene.

101. (New). The method of claim 97 comprising moving the tissue sample to a reaction chamber containing paraffin at 60°C.

102. (New). The method of claim 97 further comprising a central processing unit (CPU) programmed to control the ultrasound transducer for each processing step of the method.

103. (New). The method of claim 97 wherein one or more ultrasound transducers are used to produce an ultrasound field such that at least a portion of the tissue sample receives ultrasound of a uniform frequency and a uniform intensity.

104. (New). The method of claim 97 wherein the ultrasound is a single frequency in the range of 0.1-50 MHz.

105. (New). The method of claim 97 wherein the ultrasound transducer moved by the robotic system further comprises multiple heads wherein one transducer head produces an ultrasound frequency different from the frequency produced by a different transducer head.

106. (New). The method of claim 102 wherein the central processing unit further monitors temperature of the sample.

107. (New). A robotic system for fixation of a tissue sample, comprising:

an ultrasound transducer, a tissue sample and a sensor;
a robotic which moves the ultrasound transduce tissue sample and sensor from a first reaction chamber to a next reaction chamber; and
a central processing unit;
wherein said central processing unit controls the application of ultrasound to the sample at a frequency of at least 100 KHz.

108. (New). The robotic system of claim 107 wherein the first reaction chamber contains a fixative.

109. (New). The robotic system of claim 108 wherein the next reaction chamber contains ethanol.

110. (New). The robotic system of claim 109 wherein the next reaction chamber contains xylene.

111. (New). The robotic system of claim 110 wherein the next reaction chamber contains paraffin at 60° C.

112. (New). The robotic system of claim 107 further comprising an ultrasound transducer having two or more heads.

113. (New). The robotic system of claim 112 wherein a first head of the transducers produces an ultrasound frequency that is different from the ultrasound frequency of a second head.

114. (New). The robotic system of claim 107 further comprising two or more ultrasound transducers.

115. (New). The robotic system of claim 114 wherein the each of the transducers produce an ultrasound frequency different from the ultrasound frequency produced by at least one other transducer.